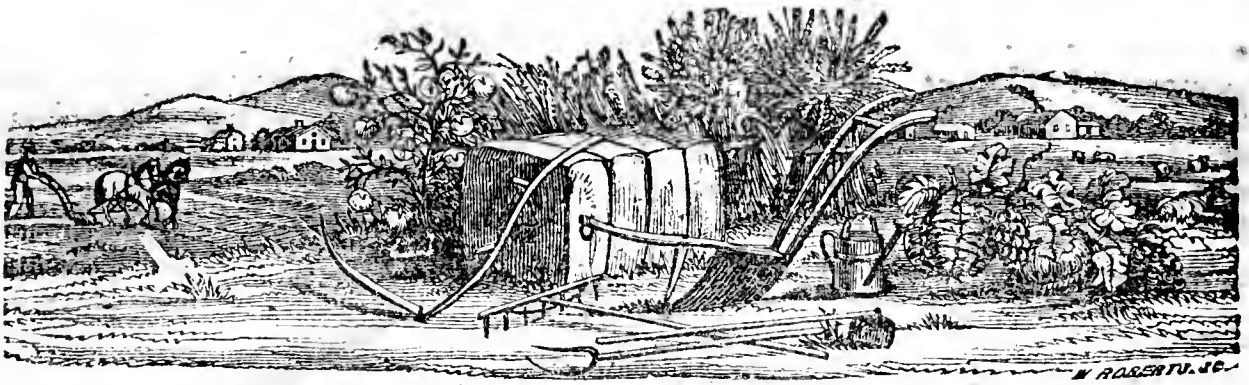


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THE FARMER AND PLANTER.

Devoted to Agriculture, Horticulture, Domestic and Rural Economy.

Vol. IX.

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BY

GEORGE SEABORN,

Editor and Proprietor.

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For the Farmer and Planter.

Capillary Attraction and Dew.

The following article was prepared some time ago for the Farmer and Planter, but the writer was not sufficiently confident in the correctness of the theories advanced, to venture on its publication. He has, however, concluded to risk giving it to the public, imperfect as it may be, in hopes of attracting attention to the important subjects it contains. [We are too much in the habit of relying on rain as the only supply of moisture to our crops. Our superficial culture in times of drought, soon exhausts this supply, and our crops wilt and die for the want of moisture.] We look to the heavens alone for the supply of this indispensable ingredient of vegetable life. When this fails we should look to other sources of mois-

ture which nature provides. Hence the importance of the subjects proposed—hence the necessity of deep, deep plowing and thorough pulverization of the soil, in order to bring the principles of *capillary attraction* and the *formation of dew*, into full and perfect operation. So necessary are these two principles in times of drought, that the opinion is confidently entertained, that crops may be matured without rain in summer, by a proper preparation of the soil, provided the earth is well saturated in winter. The interesting experiments of Mr. Dalton, quoted by A. G. Summer, in his article on the elements of good tillage, prove the fact to a mathematical demonstration, that a sufficient supply of moisture can be provided by deep tillage to make a crop without rain in summer. What a field of enquiry and investigation does this subject present, as well to the scientific mind, as to the practical farmer. I hope this feeble effort will attract some attention to it, so as to more fully develop the laws of nature and apply them to the practical purposes of agriculture.

Capillary attraction in a chemical laboratory, is that by which water is said to rise in a tube. But nature, whose laboratories are on a larger scale, makes this simple principle subservient to the wisest and most valuable purposes. By it the particles of moisture from below are attracted upwards to the surface, until every particle of earth, if there is sufficient moisture, is pervaded as one mass. The principle of gravitation, or the downward principle, and this upward attraction, seem to be auxiliary forces, the object and uses of which doubtless are that every particle of earth should be supplied with

moisture. Rain or moisture is the solvent by which manure or the food of plants, after it has undergone sufficient decomposition, is prepared and conducted to the mouths of plants. Manure, in a dry condition, cannot act—it is perfectly inert, and has to be rendered *drinkable* before the plant can take it up. How soon after a shower of rain, do our crops and all vegetation revive. It acts like a charm—a cup of water to our parched and thirsty mouths, is not more grateful and reviving than a shower of rain from the heavens upon a dried and famished crop. How careful should we be, therefore, in husbanding this great source of vegetable life, and keeping a good supply on hand when the heavens fail. It can be done, and should be done by every provident farmer. He should have his cells and reservoirs of water deep in the bosom of the earth, that when the supply on the surface fails, this principle of capillary attraction, as with a cup, will carry moisture to the young and tender plant, and slake its thirst from the fountains below. As I heard our distinguished and lamented neighbor, Mr. J. C. Calhoun, make use of this emphatic remark at a plowing match in our village, in which the extraordinary depth of 17 inches was reached by a span of two horses, with Dr. Broyles' subsoil plow, "*What a reservoir for moisture.*" If, then, this great depth can be reached by plowing, and there can be no question of the fact, since the introduction of the subsoil plow, and when once well saturated by rain, who can doubt that a sufficient supply of moisture can be provided to perfect a crop.

It may be well to add that this principle of capillary attraction is the principal cause of the difficulty of draining our wet lands; a want of a knowledge of which is frequently a serious impediment to success. It has been ascertained that water will rise in lands several feet above the fountain, and thereby will permeate the whole mass with a superabundance of moisture. The remedy is, to ditch deep and have a sufficient fall to afford a current to carry off the supply, which would otherwise find its way to the surface.

The cause of dew is said to be the escape, or rather the radiation of heat from the earth, which coming in contact with the cold and vapor of the atmosphere, is, by means of the unequal temperature, condensed in the form of dew, and settles on plants and the surface of the earth. This is another admirable provision of nature for supplying moisture to plants.

The sun is the great source of light, heat and moisture, all of which are necessary to the support of vegetable life. The heat that is absorbed by the earth during the day, is at night returned into the surrounding space, and there meeting with the aqueous vapor suspended in the atmosphere, precipitates it into visible moisture. It is a law of nature when two bodies of unequal temperature are brought in contact, each will part with their qualities until an equilibrium is produced. The cold of the atmosphere, and the heat of the earth, mutually act on and neutralize each other, and condensation is the result. A palpable and visible illustration of this principle, is to be seen in the sudden condensation of drops of water on the outside of a tumbler when cold water is poured in, in a hot summer's day. Here the atmosphere supplies the heat, and the water the cold; whereas in the formation of dew, the earth supplies the heat, and the atmosphere the cold, but the result is the same in both.

Does not the same law prevail in the production of rain? Of this I am not very positive, but will endeavor to explain. When two currents from opposite points of the compass, and of unequal temperature, meet and mingle together, the result will be rain, and in proportion to the inequality of temperature, will be the quantity of rain that will be precipitated.—Hence rains in summer and in tropical climates are more severe and abundant. The heaviest falls of rain are when two clouds from opposite directions meet—the one containing cold and the other heat, the union of which go to form and produce condensation or rain. We know the fact when the winds prevail for any length of time in one direction, as they do in some parts of the earth, that dry weather is the consequence. We know the fact, also, that rains are more abundant in mountainous regions, than in plains during the summer, because there both heat and cold can be freely supplied. We know the fact, also, that dew is more abundant in summer than in winter, because more heat is absorbed and therefore radiated, thereby furnishing a supply of moisture at the very season when it is most needed. It would seem, therefore, that the shifting of the winds is necessary to produce rain, or in other words, that the admixture of heat and cold is necessary to the production of rain, as we have seen in the formation of dew, and that the same law prevails in both. I merely throw this idea out for what it is worth. I am not sufficiently versed in meteorology to decide

the point. I would be very happy to see the subject taken up by some mind more capable of elucidating it. I have only glanced at it to illustrate the theory of dew.

We must look, therefore, to the influence of the sun, the great source of light, heat and moisture, for the dew. In one respect, it would seem that he performs contradictory offices—for heat evaporates moisture as well as imparts it. The sun, during the day, dries up the moisture from the surface of the earth—but when his rays are withdrawn, the heat that is absorbed during the day, restores a portion of it back by its action on the cold and vapor of the atmosphere, to nourish plants and revive the drooping spirits of the vegetable kingdom. How wonderful and beneficent is the wisdom and goodness of God, as seen in these simple operations of nature, and how can any one who is familiar with her laws in those grand and beautiful adaptations by which the whole of His creation is teeming and sustained, be indifferent to His goodness and His power.

These are a few practical inferences to be deduced from the above principles. Every one who is familiar with the subject, knows that it depends greatly on the condition of the earth as well as the state of the atmosphere, with regard to the formation and abundance of dew, and the supply of moisture by capillary attraction. We see it very partially on our hard and beaten roads, or on our shallow plowed lands—we see it always abundant or scarce in proportion to the good or bad pulverization of the soil. Hence, then, from these operations of nature, is a valuable lesson to be learned with regard to tillage. It is at war with shallow plowing—it is at war with the partial cultivation of the surface, the modern practice of *ringing* the crop or cultivating the ridge on which the crop is planted, and leaving the balks or interslices untouched. It is at war with suffering land to remain long unbroken while in a state of rest. This is the reason why our old fields recover so slowly from the exhaustion of previous tillage. There is a striking analogy between the perspiratory action of the skin in animals and the capillary attraction which takes place in the earth. The health and vigorous action of both depends on the free and unobstructed exercise of these two functions; and whatever tends to impair them, is sure to retard in the exercise of the laws which govern both in the animal and vegetable kingdoms.—We say that no animal can remain long in health where the pores of the body are closed

up. This is the channel by which nature frees the body from a portion, and a large portion, of the impurities by which it would be clogged up and obstructed. So if the pores of the earth are closed, her numerous mouths, which are fed and supplied from the atmosphere and earth, stopped up, it cannot be said to be in a healthy and vigorous condition. The remedy in both is to keep the surface well tended, the body well rubbed and clean, and the earth well pulverised and the pores open to the influence of atmospheric manures, of capillary attraction, and the abundant formation of dew. But all these influences which nature provides for the support and sustenance of vegetable life, can only be supplied by deep and thorough plowing.

This we consider the *sine qua non* of all good culture. Without it, all attempts to improve our lands will be ineffectual; for I believe in proportion to the depth of our plowing will be the production of our lands, provided the subsoil is made as rich as the surface or top soil.—In this respect we may be said to multiply the area of land we cultivate. For instance, take four inches as the ordinary depth of plowing—the crop which grows on this tilth of soil is confined to the four inches reached by the plow; the roots of the plants cannot go deeper in lands containing stiff, impervious subsoil. If we plow four inches deeper, or eight inches, we increase the area of land by giving double the amount of pasturage for the roots of plants—that is, we double the capacity of the earth to produce, the same as if we doubled the quantity of land. And so on through as many strata of earth as is reached by the plow and by manuring. If we go to 12 inches, we add another acre of land to our crop—the same as if spread out on its surface; and beyond the evaporating effects of the sun or excess of moisture, which under-ground draining prevents. If this theory be true, and we should like to see it discussed, what important and valuable consequences may be deduced from it. Instead of planting our crops on the surface, to be parched up by drought and famished for want of moisture, let us multiply our crops by bringing the lower strata of the earth into active and fruitful operation; where moisture will be supplied by rains, or for the want of it, by capillary attraction and dew.

Another important corollary from the above theory, is, that the same culture applied to the top soil will serve for the successive layers or strata of earth, after it has been penetrated by the plow and made pervious to the roots of

plants we cultivate. The plowing and hoeing the upper or surface crop, will redound to the benefit of the lower strata, or under ground crop. What a vast amount of labor will this save in farming. By cultivating one acre on the surface, we cultivate two or three acres, or as many as we can reach, by subsoiling and manuring. We don't know any more powerful argument against spreading out our crops over so large an extent of surface soil, and reaping such scanty products, when the lower strata is within our reach, and not only much more productive and free from the casualties and uncertainties of the surface or top crop.

As this theory is new, so far as we have seen, we may not make ourselves sufficiently understood. We throw it out for what it is worth, and want farmers to consider it. It may, if true, prove a new era in farming, and be the means of directing the attention of our farmers to deep plowing and a thorough preparation of their lands. If our top crop should fail, as it frequently does from drought and a want of proper preparation of the land, let us have another crop beneath, not subject to such causes—a crop that may be said to be independent of seasons, wet or dry. But this theory is only true on one condition—that is, that we make the lower strata as rich as the top soil. In clay soils, the subsoil is an inert mass, except in inorganic manures—impervious to the roots of plants, and adding nothing to their growth and nourishment. But when it is penetrated by the plow, we let in atmospheric influences—change its color and constituents, and render it a fit receptacle for the roots and nourishment of plants. But there is another kind of soil that is already rich from the hand of nature, and which only requires to be opened by the plow, to afford layers on layers, successive strata of great fertility, and on which enormous crops could be raised if properly prepared by the spade and the plow. I allude to the rich alluvial soils of our branch, and creek and river bottoms. These lands have been heretofore almost entirely neglected on account of the labor and expense of preparing them; but latterly their great value and productiveness have been more appreciated. I believe there are lands enough of this description in our State, to support the entire population, if properly drained and brought into cultivation. It is on these alluvial lands that the top soil of our uplands have been deposited, forming layers on layers, successive strata of inexhaustible fertility. These deposits have been going on for ages. The vegetable, mineral and animal king-

dom have each yielded their richest ingredients to their formation. Man, too, by shallow plowing and down hill culture, has contributed largely to their increase. But the principal agent by which they have been formed, is water. From the smallest rivulet that slowly percolates through its devious windings, to the majestic river that overflows its banks—each with their tributaries, are freighted with the rich materials washed from their surrounding borders. A soil thus formed by the plastic hand of nature, and continually receiving accessions from the same bountiful supply, needs only the aid or art of man to make it fertile and productive. All that is necessary to make it yield its treasures, is to plow deep and enable the roots of the plants to penetrate its lower strata, and feed on its rich pastures. In such soils there can be no question that the above theory is true to the letter—that the lower strata and each successive layer is rich and abundant with the pabulum of the plants, and all that is necessary, is to develope and bring them within their reach. I might refer to some of the richest alluvial lands on our globe, for an illustration of these facts. The Nile, to which the ancient Egyptians paid divine honors, with much more reason than to their senseless deities, has been pouring her rich treasures from the mountains of Abyssinia for ages, and forming the richest delta in the world. Our own Mississippi, or to adopt the more expressive nomenclature of the Indian tribes—the *father of waters*—with her giant arms stretching over more than half the North American Continent—is enriching a valley second to none on the globe, by her vast and constantly increasing alluvial deposits. The Amazon, too—on our twin continent, is said to possess a valley of magnificent extent, and perhaps of greater fertility, from the fact that it empties in the ocean directly under the Equator. But these vast rivers on our globe, only exhibit on a larger scale, what is constantly going on in our smaller streams—the smallest rill carries on its tiny wave something to enrich the valley on its borders—they all constitute so many vehicles, aided by the principle of gravity, for transporting the rich materials washed by the rains and carried by their floods to swell the depth and extent of their alluvial deposits.

These lands, many of them, are beds of manure—nature's composts, rich enough to be hauled out on our old fields, and more especially, a good ingredient for mixing and compounding with more active and stronger fertilizers. In this latter respect, they have been

wholly overlooked and neglected. They contain the cream—the top soils or humus of our high lands that have been denuded by our wasteful and improvident culture, and washed into the valleys below. They also contain a large portion of the essence of the animal manures, that are suffered, by the most shameful neglect, to be swept from our barns and stables by the showers of rain that falls from the heavens. The only way we can recover our lost treasures that have been wasted—thrown away by our improvidence, is, to go to work improving our low grounds by thorough draining and by deep plowing and pulverization of the soil.—Shallow plowing will only develop half the resources of such soils. The underlying strata is as rich as the top soil, and only requires to be perforated by the plow, to produce as large a yield. Let us, therefore, not rely on the top crop, so liable to be cut off by drought and other casualties; but on the under ground crop, beyond the reach of the causes which affect the surface crop.

PENDLETON.

For the Farmer and Planter.

Weeds.

"But now an aged man in rural *woods*,
Following, as seemed, the quest of some stray ewe,
Or wither'd sticks to gather."—MILTON.

MR. EDITOR:—Whenever one who has declared war to the knife and openly proclaimed that he would give no quarter, begins to complain of the weapons of his adversary, it is pretty strong presumptive evidence that he is looking out for a chance to run.

In your Nov. No. you have again opened your batteries upon our defence of weeds.—You complain of our using ridicule, of our cutting wit, and object to all such "artifice in a genteel and dignified controversy." These are points upon which people will entertain very different opinions. Poets complained, in old times, of the caustic wit of Swift, of Sterne, of Addison, of Steele, and complain now of Thackeray, and Dickens, and Paulding, and Hawthorne.

One who stands entrenched behind truth, however, need never be afraid of these pointed arrows, for they will fall blunted and harmless at his feet. Your case of Lord Shaftbury is just in point. But, my dear sir, you disdain all attempts at rhetorical flourishes, and in the next breath fling four big dictionaries at our head—one of them a French one. Dim remembrances of "Orthography, Etymology, Syntax and Prosody," start to life, and we shake

in the knees at the thought of what we have to encounter.

But, sir, as you have run us back to the wall, we must make the best fight we can of it, and as fighting is a serious business, we prefer doing it always as good humoredly as possible, and must crave your indulgence if we can't look mad enough to suit your idea of dignified controversy.

You have appealed to the dictionary. We are not inclined to recognise Webster or Worcester as good authority. They are modern Yankee dictionaries, and should be kept North of Mason and Dixon's line. Webster has legitimatised (if we may so speak) almost every slang phrase in use.

The authorities by you quoted, have given the *modern* definition of weed—that is not the way to arrive at the true meaning. The original Anglo Saxon word "weed," so says the best English authority, "denoted vestis, vestimentum," and the meaning of the word, whether applied to grass, the herbage (the verdant clothing) of the field (*subsequently* restricted to useless or hurtful plants), or a clothing of the human body, is probably a covering—that which covers. It is used in the sense of a covering in the New Testament repeatedly—as a covering of the ground and of the body—and by all the old English writers. Upon the decline of Pastoral life, and the introduction of cultivated crops, it began to be used in a different sense—as a noxious or useless plant, in contra distinction to cultivated plants. We have never denied that weeds were noxious and troublesome pests in the cultivation of a crop. The two cannot thrive together, and as the natural production will overrun the artificial, man must keep them subdued. But we do deny that weeds, when allowed to grow up, to shade by their branches, to protect from leaching and washing by their roots, to die and to rot or be turned under in a soil, are exhausters—nor have we had the first argument from you, sir, upon that point. The fact that they are not tolerated in a cultivated crop, is an argument that they are injurious to the crop—no more. It is no proof that they are "per se" pests.

Your first position, then, that you have the "universal testimony of language" to prove that they are noxious and useless, we think has been fairly met.

As to the second point, "that weeds afford rest to land, and thereby restore to the earth the pabulum that has been taken up by the

crops grown on it, we can safely say that we have advocated no such dogma. The pabulum that has been taken from the earth by repeated crops grown upon it and carried off, can only be restored by returning the missing constituents to the soil, which cannot be *wholly* done by weeds, rest, rotation, or any process of *cultivation*. There we plant our standard, Mr. Editor, and intend to stand by it. You may ameliorate a soil, improve its productive capacity by rest, rotation and judicious culture, but you never can, by such means, restore its lost fertility. And this brings us to the startling opinion advanced by you in the next paragraph, "We do not believe that land requires, or is improved by rest. On the contrary, there is no pause in nature's production, and the earth was evidently designed to yield a regular, uninterrupted produce." This is too good to be true, or we have looked about us to very little purpose. You must possess some magic power—some remunerating influence in your plowshare, which man has hitherto never dreamed of.—We would like to understand this art of taking 16 from 17 without reducing the number.

"Nature's constant tendency and desire to propagate lands," you say, "to great prodigality and variety in her productions. But there is a great difference in plants with regard to their fertilizing and exhausting effects on land. Nature, then, nurses two sets of children—one to nourish and bless her—the other to destroy and disgrace her. We confess to more faith in nature's wisdom.

Again. "As the productive quality of the earth never ceases till it is *entirely wornout*, (?) if some crop is not planted, weeds will be *voluntarily* produced." Why, but a moment ago, my dear sir, we were comforted with the idea that "there was no *pause* in nature's production." And in the next breath we have "the idea of leaving land to rest is wholly impracticable and ridiculous, from its constant efforts and tendency to produce something, it should be our endeavor, by a judicious intermixture of crops, to add to and increase, instead of diminishing its powers of production." And here we have dimly shadowed out your grand talisman—rotation of crops.

We honestly confess that we cannot see clearly through the above reasoning—it bamboozles us, but fails to convince us, and we have little hope of ever being convinced that a field exhausted by repeated croppings, cannot be improved by rest—from its constant tendency to produce what nature suggests, and yet can be improved by man's selection and cultivation.

Rest and rotation must go hand in hand, or there can be no improvement. Any system of rotation by which one crop after another is taken from a soil without the return of the fertilizing elements in some form, must lead to utter impoverishment.

But we will spare you further annoyance for the present.

BROOMSEDGE.

Big Branch, March 1st., 1858.

For the Farmer and Planter.

Improvement of Wornout Soils—A Proposition.

MR. EDITOR:—No subject, perhaps, within the wide range of human investigation, demands more thought at this time, than that of agricultural improvement. The future prosperity of the South, as well as the interest of the "peculiar institution," demands it. Every slice of Southern soil that is exhausted by tillage, or washed into the swamps and rivers, by neglect, detracts, in no ordinary degree, from the independence of the planting States. I would rejoice if the States of North Carolina, South Carolina, Georgia, Alabama and Mississippi, should pass a law that not another inch of land should be brought from the woods into cultivation, until every acre of soil that had been cleared, fenced, scratched to death, and laid out, was made to produce 40 bushels of corn per acre—the only exception to the rule being in favor of those who have never "wornout" any land. Such a law would annex a larger territory to the South than Kansas, and of much better cotton land, and soon add to our delegation in Congress, to defend the cause of the "despised land of flowers."—The plow, and not the sword; the honest husbandman, and not the demagogue, would add this territory to the Union. Just think how much permanent strength such a course would add to the South! What a country we would have!! We could clothe the world and feed ourselves.

Let the planters of the old cotton growing districts of the South, *feel themselves at home*—maintain their position—improve the old homestead—prune the old orchard—enjoy the society of old friends—fill up the old gullies—improve the old red hills—go to the old moss-covered church, in whose yard repose the ashes of long departed friends; and then the "desert would rejoice and blossom as the rose."—Where the thorn and thistle now grow, the golden harvest would gently bow to the passing gale, posterity would be blessed, and ourselves immortalized.

But I have a proposition to make through your journal, to your readers, to this effect: I will be one of twenty who will give five dollars to raise a hundred dollar medal, to be given to the writer of the best essay on the improvement of old worn land—the essay to be published in your paper during the current year; at the end of the year to be submitted to a committee of five, chosen by the Editor of the Farmer and Planter, and the premium by them awarded. I do hope that this proposition may be responded to at once, and that it may be the means of affording the readers of your paper the pleasure of reading several essays on the great subject of the agricultural solution of the South.

Yours, &c., G. D. HARMON.
Edwards' Depot, Feb. 21st., 1858.

Another tune on the Organ.

The following communication from an old and esteemed friend, Dr. M. W. Phillips, was received by us whilst in attendance on the legislature, and was thrown, with other letters, into our trunk, with the intention of attending to its publication on our return home; but with the press of other neglected business during our absence, it was lost sight of, and only recovered since the publication of the last number. And now we are doubting whether its publication is necessary or not. So far as the present Executive Committee are concerned, we think it unnecessary, their minds having been fully made up on this subject; but we believe there are yet some members of the Society who differ with the Committee, and are yet in favor of an organ to be published at Columbia, although its impracticability has been, to most of the members, we think, fully demonstrated. If the members of the present Committee, or only a part of them, should, at our next anniversary, decline serving longer, others may take their places, who may take different views of the matter; and hence we think it well enough to keep it before the Society, that the minds of members may be fully made up whenever the subject is brought up for their future action.

We thank our friend for his remarks touching the Farmer and Planter and our services in the cause.—We are opposed to making our paper the organ of the Society, further than to publish such matter as the Committee are disposed to lay before the public, which we will at all times do with pleasure, and promptly.

To the Friends of Agricultural Improvement.

BRETHREN AND FRIENDS:—A friend, as well of my own, as of the cause we all love to honor, a citizen of South Carolina, a worker, writes me that some of our friends are anxious, aye, eager to make an organ for the Agricultural Society. And perhaps it may now be done.

even. I trust not, aye, I feel so deep a solicitude in the success of the Society in my native land, that I could earnestly pray God it may not be. I may err—yet I do sincerely believe that agricultural improvement is an instrument for good, not alone temporal, but spiritual, and a cause that every preacher, every christian can and ought to labor for. I take an interest in Carolina's welfare, and what ever adds to her bettered condition, gratifies me as if blood of my blood were succeeding.

I do hope and trust that "second: sober thought" will induce one and all to let the publication of a paper be an individual enterprise. I have seen so much loss from these paid superintendencies, that I fear if the Society publishes a paper, that it will be involved and death the consequence. If material can be had, publish a yearly report, giving results, whether of failures or successes; though even then better to give material to an individual, increase his subscription list, or the amount of job, so he can double or quadruple the size, or still better, give a weekly dish, and thus publish fully.

Pardon me for my presumption—"Out of the abundance of the heart the mouth speaketh."—I have made agriculture my day study and my night dreams, for years. A quarter of a century have I been a devoted; yet, I admit, with all this, I may be in error, and often am. I write to friends, to brothers—I feel an abiding interest in your success. Why do you want an organ? Cannot our friend Seaborn give you all the advantages you desire? I admit that Pendleton is rather remote, not central where the paper should be. But even to patronize an effort to build up another paper now, will certainly alienate many of your warmest friends. Seaborn has warm and devoted friends; you will thus bring about contention, strife, where peace, unity and harmony must prevail for success to follow. Just so sure as you start another paper, just so sure will there be division.—Besides, friend Seaborn, like the faithful soldier, has stood at his post, giving you warnings of danger, cheering you with an occasional six shooter from our friend Broomsedge; aye, taken the camp fair, enduring the "peltings of the pitiless storm," when now you are about to ride safely the storm and get into a place of rest, you will "cut him off with a shilling," as old Delf used to say when I was a boy, to give the pass to a favored one. No, no; be just, be generous—you can afford it. Seaborn has nobly withstood the storm, and I have been proud, gloried in fighting under his banner.

An individual will can only succeed. Where

is there a community paper now published, of any stripe—religious, political, commercial, medical, that is half the paper that an individual one of the same matter can be produced? I know not one. Yet look at the successes which have followed individual enterprise. Look at the successes and expense combined that has followed individual enterprises in education, banking, &c., &c. Will agriculturists, Southern men and South Carolinians lend a helping hand to encourage a monopoly, even be it in the shape of an agricultural paper?

Publishing your own proceedings as a Society, is a different affair—yet “an organ” embraces more than this. Try it, my brethren and friends. I do, and though I may incur a rasping down, I am bound to tell you of it.

Yours, in kindness and a brother's love,

M. W. PHILLIPS.

December 5th, 1857.

For the Farmer and Planter.

Salmagundi.

MR. EDITOR:—The principal motive of this communication is to express my thanks to Dr. Parker, for his letter of the 7th of January last, which you have published in your March number, and my gratification at the good fortune at having made myself *understood* by one of our association so intelligent and useful as he is. When our Society acts upon the great principles of *acquiring* and diffusing useful information, then, and not until then, will it be in the way of attaining its highest usefulness. At least that is the opinion entertained in this benighted part of the country. Here I know we need more prosperity. Tillers of the soil deserve more compensation for their labor than they now receive—I mean as compared with other occupations. Our best lands have been cut down and exhausting crops taken from them, until but few of the cultivators of *uplands*, without an economy almost niggardly, can realize more than a reasonable competence. Our lands *must be preserved and renovated*, is the first great fact to be considered. The details of how it is to be accomplished, is a great investigation well worthy the study of the wise and patriotic. It has occupied much of our humble reflection. It is a wide field in which there is ample room for many laborers. I propose at this time to invite the attention of your readers to one small spot in the vast area:

Our bottom lands still pay, but if we continue the system on them that has so deteriorated the uplands, they must, *in the end*, share the

same fate. Our best interests demand that their fertility be maintained. I know its accomplishment *involves diminished income for the present*, and *therein lies the great difficulty*. But it is surely time that we understood our condition, and act with wisdom. But for the bottoms our bread would be uncomfortably scarce every year, and if we make no change in policy *until they are exhausted, what shall we do?*

The first thing that I see to be done, is, to stop the sand from washing from the hills. The hill-side gullies now furnish sand enough to cover much of the best land at the foot of the hill, so that an ordinary plow cannot reach it; a sufficiency to fill most of the branch ditches and small water courses, so as to raise the water in the land and make it too wet for grain—or the labor of ditching has to be done at least once every year, and some times oftener; thus producing an immense tax in labor, and in many instances the sand so fills up the beds of the larger streams, where the ditcher cannot remove it, that land cannot be dried at all. I think I know various places on the Saluda now, where the bottom of the river is a foot or two higher now than when the country was first settled. Our ditching is to be a never-ending job, if we do not stop the sand from coming down.

Much may be done, I have no doubt, by careful horizontal cultivation and guard ditches, where the land is still cultivated. But the old field gullies must be stopped too, and time will prove the great folly of neglecting to do it because the labor employed to do it, does not pay immediately at the end of the job. We must begin to look farther ahead, and not expect to obtain at the end of each year, in money, the worth of every lick struck in the year. We must begin to sow something at least, with the expectation of reaping in future years.

The cry “that bottom land will never wear out,” is perfectly senseless, unless it lies so low that it is frequently overflowed; and even then the overflowing is too uncertain, unless the land is all the time in grass. Bottom land, as a general rule, will deteriorate as surely as upland, but not so soon. The only difference is a question of time. Then what shall we do?

I propose for consideration, the propriety of stopping the sand, as I have before said. Sowing the parts liable to frequent overflows in grass for mowing and pasture; and by *rest* and *rotation*, to supply the remainder with a full equivalent of vegetable matter, for all the crops taken from the soil consume in their production.

I am sure, from experience, that a piece of bottom land sowed in grass, and one crop of hay taken off, and the second growth depastured for four or five years in succession; will greatly improve the fertility of the soil for the production of Indian corn.

If the land is rested for one or more years, and the spontaneous growth of weeds and grass left to decay on it, the land will improve in fertility. But I think it would be better policy to cultivate grasses instead of weeds, (So think we.—Ed.) and depasture the grass when nearly full grown, or letting farm stock consume crops of oats or corn on the ground where it grew. In other words, any plan that would supply an ample return to the soil in *animal*, but *more particularly* in vegetable matter, for what had been taken off in crops.

I am aware that the great difficulty in the way of the adoption of any plan of this sort, is, that it will necessarily involve a diminution of income; for our people call *income*, all they can manage to squeeze out of the earth, whereas, most of it is not *income*, at all, but *capitol* that they are consuming. It is now a very important matter that our agriculturists learn immediately to understand the difference in their business, between income and capitol. *Income* is what a farm will yield annually, without decrease of fertility. But a farmer is consuming his capitol, just in proportion to the decrease of the fertility of his place. One of my neighbors offered to sell me his place, the other day, for the amount that his crop would pay seven per cent on; and thought that would be a very fair way to estimate its value. I replied, that would be fair if his place was getting *no worse*, but rather better every year; but that the way he was managing it was rapidly deteriorating, and would very soon pay neither the principal or interest on the investment. His way of estimating the value of land is very common, but most egregiously ruinous.

RIGMAROLE.

The following information in relation to what some of our sister States are doing in aid of their agricultural interests, we take from the "American Farmer," with the remarks of the Editor on the same. It *should be considered* a subject of *paramount* interest to every State in the Union, and yet it is one less cared for—more neglected than all others by our leading law-makers and politicians, who are generally men of other professions, and who scarcely seem to know that agriculture has any claim on the State. We would especially call the attention of our readers to the remarks of Mr. COLEMAN, Editor of the "Valley Farm-

er." Such should be the sentiments of every farmer and planter in our whole country. They *have* the power and justice to themselves, and their cause *ought* to exercise it.—Ed. F. & P.:

State Aid to Agriculture.

One feature at the late exhibition of the U. S. Agricultural Society, was peculiarly interesting, and worthy of example. It embraced the discussion of subjects of general interest to Agriculture, in the meetings held during the evenings of the week of the Show—at one of which gentlemen present from the several States were called upon to give a "recital of what is being done by our sister States in aid of agricultural societies, and also in behalf of agricultural education." As this is a subject of deep interest to us and our State at this time, we present the substance of the remarks made by a number of the representatives of the States present, as found in the Louisville Journal and Courier:—

Mr. Flint, Corresponding Secretary of the Massachusetts State Board of Agriculture, arose and made an interesting statement of the aid given by the Legislature of Massachusetts to agricultural societies. Each county society receives annually about \$600 from the Treasurer of the State, and the State Board about \$6,000. The admirable plan of organization of the county and State societies was explained in detail. The aggregate payment by the State is between \$13,000 and \$14,000 in aid of all the agricultural societies. The Governor is at the head of the Board, and the Corresponding Secretary receives a handsome salary and is busily and constantly employed throughout the entire year.

Some efforts have also been made for the establishment of Agricultural Schools, and with some success, but the action on the subject has not yet been commensurate with the magnitude of the interests involved. On the conclusion of his remarks Mr. Flint was cordially applauded.

Dr. Warder, editor of the Western Horticultural Review, and a citizen of Ohio, being called upon, made an interesting relation of the organization of the Ohio State Board of Agriculture, and of about 80 County Agricultural Societies associated with the State Board, all under the liberal patronage and endowment of the Legislature for many years past.

He warned the friends of agriculture in Kentucky against the danger of the intrusion of any political influence in the organization and management of such societies, as impressed by his experience and observation in Ohio. The result of the action of the State of Ohio on the subject was highly salutary and satisfactory.

Hon. Jas. N. Brown, of Illinois, and Vice-President of Illinois State Agricultural Society, being called upon, arose and expressed his satisfaction at being present at the meeting among his agricultural brethren and in this his native State.

The State of Illinois is about to hold the Sixth Annual Fair of her State Agricultural Society, and as he had the honor of being her first

Vice President, he felt called upon to make a statement of her progress and success in the absence of her honored President.

The Legislature of Illinois gives the State Agricultural Society Fair \$30,000 annually, and also \$50 to each county society, and the bounty of the State has been judiciously and happily bestowed with the most beneficial results.—Eighty County Agricultural Societies are already organized, and over a hundred regular fairs will be held in Illinois this fall.

The vital subject of education for farmers has also received the earnest attention of the Legislature, and strong hopes are entertained that during the coming session of the Legislature, noble and liberal action will be taken on the subject.

Dr. Stevenson, of Indiana, President of the State Society, on being called upon, also made a happy response, and gave an interesting account of the progress of that noble young State, under the guidance and assistance of her State Board of Agriculture and numerous county agricultural societies, organized in conjunction with the State Board, all endowed by the Legislature from the treasury of the State.

There was also a prevailing and strong impression in the public mind of the necessity and importance of providing at the public expense for the appropriate education of that class of the community, on the prosperity of which the wealth and prosperity of all other classes depend. That education was the more necessary because of the varied and diversified nature of the employments, and magnitude of the interests of the farmers, and the variety of their crops and their stock.

Col. John Pope, of Tennessee, was next called upon, and made a reply characterized by a degree of intelligence and cordiality, worthy of the noble State which he represented. The State of Tennessee had organized three agricultural societies in three great geographical sections of the State, endowed by an aggregate of about forty thousand dollars per annum, and the universal voice of the people was that the munificent investment was most worthily bestowed, and yielded to the whole community the most ample and valuable results.

This was the true and proper course, which would make gentlemen of the farmers, and farmers of gentlemen; and he concluded with the most happy impressions upon his audience.

Mr. Holloway, of Indiana, who was chairman of the Committee on Agriculture in the last House of Representatives of the United States, on being called, made some most acceptable and appropriate remarks in relation to the report of the agricultural department of the patent office.

The endowment of this important department had been so small as to cripple the operations of this valuable department. But the appropriation for this cause has been increased, and there was good reason to hope that our government would soon organize an agricultural department, equal and co-ordinate with any other, and as important as any.

The Legislature of Indiana had also made laudable advancement on this subject since he

was the member of it; then the subject was almost ridicule; now it is cherished by the Legislature, and is highly approved by the people, and will be cordially sustained. It is the duty of the governments, both State and National, to foster this subject, and he hoped the people would require it.

The sentiments of Mr. Holloway were cordially responded to by frequent bursts of applause.

Mr. D. J. Powers, (Corresponding Secretary of the Wisconsin State Agricultural Society), was called out; and though his State was, as he said, fresh from the woods, he made a most lucid and interesting statement of the progress of agriculture, and of agricultural legislation and education in his rising young State.

That State Society of the State of Wisconsin receives \$3,000 per annum from the Treasury, and \$100 is also given to each County Society, and the volume of Agricultural Reports is published at the public expense—making, in the aggregate, more than \$10,000 per annum; and the Legislature had provided for an Agricultural Department to her State University, which gave high promise of great future usefulness and success.

An effort was made also last year to endow a separate Agricultural School with the sum of \$100,000, which measure, though it failed for the present, yet it is bound to succeed at the last.

Their Society has held six Annual Fairs, and will soon hold the seventh, and all had been pre-eminently successful and entirely satisfactory.

They had also an agricultural paper with a subscription of about 10,000, while 20,000 copies of other papers were taken, which gave assurance that they had a reading community.—He concluded amid hearty applause.

Mr. N. J. Coleman, editor of Valley Farmer, said, that the cause of agriculture was making rapid advancement. Nearly forty counties had already formed agricultural societies, at which highly creditable fairs would be held this fall. Not less than fifteen new county associations had been formed the present year. These societies receive an appropriation from the State, if he recollected aright, of two hundred dollars each, annually. Missouri has likewise five district agricultural societies, being the Central, the North-eastern, the North-western, the South-eastern and the South-western. These district societies had been formed to take the place of the State Agricultural Society. They were constituted by the Legislature of 1855.—Each of these district societies received an appropriation from the State of one thousand dollars annually to aid in defraying the expenses, and in contributing to the premium list.

They had also a society in St. Louis, called the St. Louis Agricultural and Mechanical Association. A charter was granted for the formation of this society in 1855. The association had purchased fifty acres of ground, contiguous to the city of Saint Louis, for the sum of \$50,000. Nearly \$50,000 more had been expended in preparing these grounds for their annual exhibitions. The sum of \$10,000 was

offered in premiums at the First Annual Fair, which was held last fall, and such was the success of that exhibition that the sum of \$16,000 has been offered in premiums for the approaching Fair.

He had a few remarks to make on the subject of agricultural education. That a more thorough education of the farmer was needed, none would deny. Our system of farming must be improved, and it can be only by improving those who cultivate the soil. That the system of agriculture which had been pursued was radically defective, we had only to refer to the older States of our Union to clearly prove. By an improper system of farming the lands in some of these States, had been exhausted of their fertility, until it would no longer pay to cultivate them, and they had been abandoned, or a vast amount of money had been expended in the purchase of costly fertilizers to restore them to fertility. One would be astonished at the cost of a single fertilizer to this nation. For the two years ending June 30th, 1856, over 170,000 tons of guano were imported into the United States. At \$50 per ton, the cost of this was over \$8,500,000! Is not this a great sum to pay for a single fertilizer? By a proper system of farming, our lands should grow better instead of poorer, and thus millions would be saved to the country. If this rapid exhaustion of our fertile lands continues, what will become of us as a nation? Is it not evident that something should be done to prevent this, and to improve our system of farming generally?

And the proper method of bringing about this improvement, is by the establishment of Agricultural Schools—by educating the farmer—by using better judgment in the cultivation of the soil. It is important that the farmer should be educated for his pursuit. In law, medicine, and theology, schools are established for the education of those who are to follow their respective pursuits. It is equally important that schools should be established for the education of those who pursue the more honorable profession of tilling the soil.

Our Government has established military and naval schools, but what has it done towards establishing Agricultural Schools? According to our last census reports, more than eighty out of every one hundred of our population follow the pursuit of Agriculture. The farmers of this country have the power to do as they choose. And they should exercise that power. Agricultural colleges and model farms should be established in every State in the Union, and they will be, if the farmers of the country choose to exercise their power. The sons of the farmers can be better educated at these institutions than at any other. Physical education should go hand in hand with mental; and moral education with both. These schools should be conducted so as to educate the whole man—morally, mentally and physically. So far as literary attainments are concerned, they can be obtained at these institutions as well as at any other, and physical education can be obtained much better. Certain hours should be allotted, each day, for the students to follow

rural pursuits, and they should be of such a nature as to benefit both mind and body, for the great object of education should be, to develop a strong mind in a strong body. Physical power is as essential as mental power.

The States of Michigan, New York and Maryland, have made liberal appropriations for the establishment of Agricultural Colleges and model farms, and he hoped the time would not be far distant when every State in the Union would follow their example.

These were the excellent sentiments of the speaker, in which he was cordially sustained by the meeting, as was demonstrated by frequent applause.

Mr. ———, of Indiana, remarked that he felt a peculiar interest in the subject of agricultural education, because he had retired from another lucrative profession to practice farming; with several sons to train and educate.—What we want is education connected with practical mechanics and practical agriculture.—We want, in our present literary institutions, the endowment of a department of mechanics, and the sciences connected with agriculture, such as chemistry, botany, &c.

Mr. Jones, of Delaware, would tell something of the improvement of their soil in his State.—This was demonstrated by a large increase in the productions of her staples. He was an old farmer, and the improvement had been made under his own observation, and it had been accomplished chiefly by clover and lime, and a judicious cultivation; and also by the use of large quantities of guano, and he had himself used seventy tons in a season, but the large expenditure had almost put him to jail. But the use of guano has declined, and the price is reduced.—[A mistake, Major].

Delaware has more agricultural societies than she has counties, which have conduced to the great prosperity of his State, but a domestic market has mainly accomplished this improvement; and caused the production of thirty-seven bushels of wheat on an acre of land which was once bought for \$10, on ten years credit.

The speaker then indulged in some eloquent and spirited remarks, which were received with boisterous applause, and happy mirth, as to the abuses of the Patent Office and some political measures, demonstrating the want of an Agricultural Department connected with the government, which shall redress these abuses, and regulate the agricultural branch of the national interest.

An interesting expose was made of the manner in which speculators and others raise or depress the price of grain, for their own advancement, and to fleece the farmers, and this was also a demonstration of the want of such a national department.

We can beat the world and the rest of mankind in everything, except wise and prudent legislation, and all this seems to be intended for the benefit of Great Britain and for the ruin of our own country, and this must be reformed. This he demonstrated by the relation of some political transactions and by the statements of some statistics in connexion with them; and some of his emphatic and humorous remarks

were received with demonstrations of pleasant good humor.

Mr. Johnson, of Michigan, on being called upon, could not hesitate to respond, though not in the habit of speaking.

As agricultural education is a great question, worthy of most deliberate consideration and liberal action; the want of it is great, as has been demonstrated, and he would be proud to say, that in this measure, Michigan had taken the lead; and that an agricultural department in her University, had been endowed, and a model and experimenting farm had been established.

The want of such institutions is apparent in Europe and also in America, as is evinced in the exhausting soils and wasting manures, and in the darkened intellect of immortal minds.

He differed with those who disclaimed the aid of legislation for agriculture, and gave an interesting relation of another agricultural institution, near the town of Lansing, in Michigan, erected at a cost of over \$50,000, for lands and building, on which the students should labor as practical farmers, and in which they should board and receive instruction.

Five professorships have been established, and over sixty students have been admitted, all sustained by biennial legislation, and over \$4,000 was appropriated last year for instruction, improvements, &c.

Professorships of Agriculture, Chemistry, Mathematics and general instruction, are now in operation; and this is the present condition of the institution, and it is making satisfactory progress, both as to science and practice, and is exerting a beneficent and salutary influence.

At present students are admitted only from Michigan, but the door of admission, he hoped, would soon be opened to all the sons of our glorious Union.

These results could not have been obtained without Legislative aid, and they have only been reached where such aid has been extended.

And the same effects have been witnessed as to Legislative aid to Agricultural Societies, which also receive it in Michigan with a liberal hand, and the next thing to the charter of a new county, is the organization of an Agricultural Society; and some counties, which have not over 500 inhabitants, have their County Agricultural Society, and the stimulus to agricultural improvement in all its departments, has been rapid and is obvious to all.

Domestic Intelligence.

SORGHUM SACCHARATUM.—We have received from Jos. S. Lovering, Esq., whose skill and success in the manufacture of sugar is known to the whole country, some beautiful specimens of sugar made by him from the *Sorghum saccharatum*. We are the more pleased at the reception of these specimens in consequence of its having been asserted by some eminent chemists that the sorghum contains only uncrystallizable sugar, and the impression was becoming general that the benefits which had been antic-

ipated to result from the cultivation of the plant, would not be realized.

Mr. Lovering's experiments conclusively demonstrate that the sorghum contains crystallizable sugar, and in sufficient quantities to render its cultivation profitable as a sugar producing plant. From a pamphlet sent with the specimens, entitled "A Detailed Account of Experiments and Observations upon the Sorghum Saccharatum, or Chinese Sugar Cane, made with the view of determining its Value as a Sugar-producing Plant, from September 28th to December 20th, 1857, at Oakhill, Philadelphia County, Pennsylvania, by Jos. S. Lovering," we learn that the plants upon which Mr. L. experimented were raised at his residence, a few miles North of the city, and that his apparatus was of the simplest kind, consisting only of the following:—

"A pair of iron rollers, seven inches diameter and twelve inches long, set in a frame one-eighth of an inch apart, with spout to catch and collect the juice, and a crank turned by hand, a few sugar moulds and pots, some ivory black or animal carbon; two filters, made of common bed ticking, in the shape of an elongated pudding bag; a thermometer, Beaumé's Pés-Sirop, or saccharometer, and a polariscope.—All the other utensils I obtained from the kitchen, viz: a copper kettle of ten gallons capacity, a ladle, some tin pans, bowls, buckets, &c., to contain the juice."

The following is Mr. Lovering's estimate of the probable yield of an acre of canes of ordinary growth, such as he experimented on, viz:

	SUGAR. Lbs.	MOLASSES. Gals.
Actual yield as per Experiment No. 4.....	1221.85	74.39.
Add for inefficiency of mill, 10 p. c.		
For heating and reheating, &c.,.....	5 "	
For footings, say but*....	5 "	
20 p. c.		244.37
Probable yield per acre.....	1466.22	74.39

"Further, it will be observed that my acre produced but 1847 gallons of juice. I have, however, seen published accounts of far greater yield than this. One, for instance, in this county, apparently well authenticated, reaching 6,800 gallons per acre, which, according to actual results, would produce 4,499 lbs of sugar, and 274 gallons molasses; and according to the foregoing probable results, would yield 5,389 lbs. sugar, and 274 gallons to the acre. I do not pronounce such yield of juice impossible, but it will certainly be of rare occurrence. A mean between this and my yield would be a large return.

"Another subject worthy of notice, is the nature of the season. My impression is, that owing to the lateness and coldness of the spring;

"These two latter gains in sugar would be made at the expense of the molasses, taking from it the gain which would be realized by the use of a better mill, and therefore leaving the quantity of molasses unchanged.

and the continued wet weather, the last has been quite an unfavorable season for the ripening and development of the sugar in the juice, to which cause I think a deficiency in the yield of at least ten per cent may be attributed, which would further increase the quantity to 1,612 lbs sugar, and 81 8-10 gallons molasses, a yield very nearly corresponding with that of the best conducted plantations of Louisiana, as will be seen by the following figures, which I have collated from a minute statement furnished to me by the enterprising proprietor of one of the most complete and costly establishments in that region (it being furnished with vacuum pans, and all the most approved machinery of latter times, and conducted under his own, personal supervision), of the actual product of one of his plantations of 266 acres for eight consecutive years. These figures will also furnish useful data for the estimation of the cost of production here, viz:—

Aggregate yield of juice from 266
acres for 8 consecutive years,.....4,757,700 galls.
Aggregate yield of sugar,.....3,626,415 lbs.
" " molasses,.....217,585 galls.

Comparison.

LOUISIANA.	PENNSYLVANIA.
Yield of juice per acre,.....2,236 galls.1,847 galls.
Density of juice (Béaumé).....8.44°10°
Yield of sugar per gal. of juice,.....0.76 lbs.	0.66 lbs.
Yield of sugar per acre,....1,704 "	{ Actual.....1,221.85 "
Yield of molasses per acre....102 galls.	{ Probable....1,612.00 "
Wood consumed per acre 3.87 cords, at \$2.50	{ Actual.....74.39 gals.
Coal for engine, 0.41 tons, at \$2 50 per ton.	{ Probable....81.83 "
Labor, per acre, 370 days.	

The following are Mr. L.'s conclusions:—

"1st. That it is obvious that there is a culminating point in the development of the sugar in the cane, which is the best time for sugar making. This point or season I consider to be when most, if not all the seeds are ripe, and after several frosts—say when the temperature falls to 25° or 30° F.

"2d. That frost, or even hard freezing, does not injure the juice nor the sugar, but that warm Indian summer weather, after the frost and hard freezing, does injure them materially, and reduces both quantity and quality.

"3d. That if the cane is cut and housed, or shocked in the field when in its most favourable condition, it will probably keep unchanged for a long time.

"4th. That when the juice is obtained, the process should proceed continuously, and without delay.

"5th. That the clarification should be as perfect as possible by the time the density reaches 15° Béaumé, the syrup having the appearance of good brandy.

"6th. That although eggs were used in these small experiments, on account of their convenience, bullock's blood, if to be had, is equally good, and the milk of lime alone will answer

the purpose; in the latter case, however, more constant and prolonged skimming will be required to produce a perfect clarification, which is highly important.

"7th. That the concentration, or boiling down, after clarification, should be as rapid as possible without scorching, shallow evaporators being the best.

"With these conditions secured, it is about as easy to make good sugar from the Chinese Cane as to make a pot of good mush, and much easier than to make a kettle of good apple-butter."

It may be interesting to state, that we learn from other sources that every part of the sorghum may be employed for some useful purpose. Thus the leaves, and also the scum which rises in boiling the juice, constitute very fattening food for cattle, and from the fibre of the cane left after the juice is expressed, paper of good quality may be made.

[Medical News and Library.

From the Wisconsin Farmer.

How shall the Farmer be Educated?

NUMBER II.

There are two classes of instrumentalities—Means available at home, and Educational Institutions.

Of Home Instrumentalities none are so important as Agricultural Papers—none that pay so large a profit on the capital invested. The newspaper has become an *institution*, in America, and the time will come, when periodicals devoted to Agricultural Progress will be as indispensable to the agriculturist, as text-books on science are to the professional man of the present. Already they are receiving a liberal patronage, and are multiplying in number.—The rapid development of all the natural sciences, which taken together constitute the complex science of Agriculture, and the published results of important experiments by scientific men, render them absolutely necessary to the best success of practical husbandry. And yet the great majority of farmers, shut their eyes to the light offered by such means, and with sneering contempt, turn away from what they scornfully term *book-learning*—deeming everything a humbug except the traditions of their great-grandfathers—who though they might have been very good men in their day, can hardly be supposed to have anticipated and enjoyed all the possible knowledge of the world. Grand-fathers! what could they know of the composition of the soils before chemistry—that science which discovers to the farmer the nature and composition of the soil he cultivates, the composition of the plant, the laws of its development, and the food requisite to its growth?—what of meteorology, or the relations of the atmosphere to the plant and other climatic influences?—what of Botany, Physiology, Zoology, Physical Geography, Geology and Mineralogy, all of which, three generations ago, had scarcely come to be known by name even? Besides, why are facts and theories written and published, so much less worthy

of confidence than facts and theories orally communicated from father to son?

Science a humbug? Then let us go back to the good old time when the best plow in the world was a crooked stick hitched to the tail of a jackass, while his biped brother followed behind to keep its sharpened point in the ground; when the sickle was the only instrument for reaping grain, and the scythe for mowing grass; when the old semi-circular Dutch fan shaken by the farmer's hands and thumped with his knees, was the only winnow; when all the grain of the world was threshed by the good old club-flail, swung over the head and brought down upon the sheaves with arm-wearying thump; when the land might not be plowed more than four inches deep, and the same crop was invariably continued forty years in succession, without rotation and without manure; when the best conveyance for the farmer was an ox-cart; and when the spinning-jenny, the threshing-machine, the reaper-and-mower, the locomotive and telegraph had never been dreamed of.

The farmer must lay aside this stupid cant about books and papers. Books! What were the society of the world without their inarticulate speech? Let them multiply until there be no more room to contain them. They are a mighty influence, going down to the ages with ever-increasing power. And Papers, now become the chief literature of the world! let every household have them, for general intelligence and special instruction. At all events let every farmer, who does not wish to be, at the end of life, two hundred years behind the age, have at least one agricultural paper, whose business it shall be to acquaint him, from month to month, with the growing improvements of the day, the experience of other men engaged in like pursuits, and the principles of his profession. So shall he have in exchange for the few paltry cents it may cost him, the advantage of the whole world's labor, the higher intelligence of his family, and a thousand-fold pecuniary reward. H.

From the Valley Farmer.

Raising and Feeding Hogs.

EDS. VALLEY FARMER:—I will give some suggestions about breeding and raising hogs. At the outset select a good and thrifty breed. If they cannot be had, don't get any until the opportunity offers; for it is better to have none than "land sharks" and thriftless breeds. The male hog should be kept in a lot to himself and well fed, but not made fat. The females should be let to him in December, in order that the pigs may come in mild weather. When the sow is about to farrow, separate her from all others. Allow her to go off and make her bed to herself. After she has farrowed, feed her for some time at her bed, that she may become attached to her offspring, and not allow other pigs to suck her. If permitted to leave her bed too soon in search of food, her pigs will be deprived of nourishment by older ones crowding them off. In order to secure large, strong and healthy pigs, the male should not

be allowed to serve the sow but once, and then driven off, she will produce more pigs than if she run with the male during the day. The next litter of pigs, the time should be so arranged that they come in September, which will have to be kept over, in most places, until the next fall. The first may be made to weigh from 150 to 200 lbs. net, by the 25th of November following. This may appear extravagant to the most of your readers. It is done by a simple arrangement, which is this: Keep food by them all the time—clover and corn, which, on the score of economy, is better than keeping them two years rooting up pastures and attaining no greater weight. At the age of two or three months, pigs should be taken up, marked, altered, and the rooter split horizontally; it is an appendage they can do very well without, if sufficient food is given them. But is it certain, also, that the rooter is essential when the pig is compelled to root for himself. If he is properly cared for, there will be no necessity for his rooting up and destroying meadows and pastures to get his living. Pigs that are made to weigh from 150 to 200 pounds at six months old, make delicious, tender and juicy bacon. It has quite a different flavor from that of the common scrub hog of this section. One important item I would fain impress upon the farmer; that is, to give his hogs plenty of charcoal, rotten wood and ashes mixed with salt, to correct acidity. The best article that can be given to swine is brimstone. It may be given in corn meal. It is a preventive of sore throat, measles and inflammatory diseases, and in all probability may ward off the hog cholera that is so destructive in Ohio and Kentucky, and may be anticipated in Missouri.—But Swift's maxim—"the best patriot is the best man who can make two blades of corn grow where only one grew before," is strictly applicable to pigs, as well as corn. S.

St. Louis County, Mo.

Pears on the Quince Stock.

My experience has so often been solicited by private communication in relation to the pear upon the quince stock, that I deem it proper to introduce it in this connection, with the reasons on which it is founded. Many varieties of the pear thus grafted grow vigorously and bear abundantly. I am aware that an impression has prevailed in the minds of some unfavorable to the cultivation of the pear on the quince stock, an impression which must have arisen from an injudicious selection of varieties, or improper cultivation. In this opinion, I am happy to know that I am sustained by Mr. Barry, in his address before the North Western Association of Fruit Growers in Iowa, and by other distinguished pomologists. Pears upon the quince should be planted in a luxuriant deep soil, and be abundantly supplied with nutriment and good cultivation. They should always be planted deep enough to cover the place where they were grafted, so that the point of junction may be three or four inches below the surface. The pear will then frequently form roots independently of the quince, and

thus we combine in the tree, both early fruiting from the quince, and the strength and longevity of the pear stock. For instance, of trees of the same variety, standing side by side in my own grounds for ten years, and enjoying the same treatment, those on the quince stock have attained a larger size, and have borne for seven years abundant crops, while those upon the pear stock have scarcely yielded a fruit.—We have, also, others on the quince, which twenty-five years since were obtained at the nursery of Mr. Parmenter, where now is the most populous part of the city of Brooklyn, N. Y., and which have borne good crops for more than twenty years, and are still productive and healthy.

That the introduction and cultivation of the pear upon the quince has been a great blessing, I entertain no doubt, especially in gardens, and in the suburbs of large towns and cities. And as to its adaptation to the orchard, I see no reason why it should not succeed well, if the soil, selection and cultivation be appropriate. A gentleman in the eastern part of Massachusetts planted in the years 1848 and '49 as many dwarf pear trees as he could set on an acre of land at the distance of eight by twelve feet, and between these rows he planted quince bushes. In the fifth year from planting he gathered one hundred and twenty bushels of pears, and sixty bushels of quinces. Of the former he sold seventy bushels at five to six dollars per bushel, and he now informs me that he has lost only three per cent. of the original trees, and that the remainder are in healthful condition.—*Farm Journal*.

From the Wisconsin Farmer:
Management of Bees.

Messrs. Editors:—The honey bee has been a great favorite with me for several years.—Much time and attention has been devoted to its culture. My bees have generally done well in favorable seasons; but in unfavorable ones, here was the trouble. I have had two great difficulties to contend with—the Bee Moth, and a want of knowledge of the exact condition of the inside of the hive, without which we have to guess and conduct our operations in the dark.

To protect my favorites against the ravages of the moth, a great variety of hives have been used (mostly patent) which, instead of furnishing protection, have proved excellent moth-harbors. I am satisfied that no hive can be so constructed as to admit the bee and exclude the moth. The moth's instincts are as unerring as that of the bee. No device can prevent her from depositing her eggs on the comb or in immediate contact with it. To the FRIEND, who in the last number of the *Farmer*, inquires for "the best safeguard against the moth," I would say my experience has shown it to be a strong stock of bees covering all their combs, and possessing a fertile queen. Such a stock is able and will protect itself against the moth—no others can. Should the bees lose their queen (which they often do, she not living over two or four years) or be reduced by overswarm-

ing, or the effect of an unfavorable season, or any of the many causes always tending to reduce their numbers, so that they fail to cover and guard all their comb, the moth is sure to find a place inside the hive to deposit her eggs.—The prosperity of the hive, then, mainly depends upon the care bestowed upon them.

It is a wise and wonderful arrangement of nature, that the moth-worm, or grub, when fully grown, should leave their galleries or web in the comb, and seek some safe and warm place in which to spin its cocoon. It is then easily caught and disposed of. The careful bee-master will be on the alert to assist in their destruction, particularly in the Spring.—A single pair of worms permitted to change into the winged insect, may give birth to hundreds; which before the close of the season, may supply every hive with hundreds of them. Every worm killed in the spring and early part of the season, is better than a hundred in the latter part.

Wrens destroy the moth and worms with great avidity, and boxes should be placed about the apiary for them to nest in.

But to insure success in bee culture, under all circumstances, we must cease to guess, or have any uncertainty about the amount of honey and bees contained in a hive. We must by actual examination know their real condition. For this purpose we must have perfect control of all the combs, so that any of them may be easily taken out without cutting them or enraging the bees. The only hive ever produced in Europe or this country, which fully possesses this advantage, is that of the Rev. L. L. Langstroth. I have been using this hive for the past year with the most perfect success. It is a model of simplicity in its construction, and as fully and perfectly adapted to all the instincts, habits and conditions of the bee as is possible to be made. The combs are not attached to the hives any where, but are built in frames, and suspended in the hive. I have taken a stock of bees, comb and all, out of one hive and put them into another, and in less than ten minutes the bees were at work as though nothing had happened to them.

This control over the comb and the inside of the hive, gives the attentive bee-master perfect protection against the moth. I was absent from home a few weeks last summer. On my return I found one of my stock of bees showed evidence of being troubled by worms. I opened the hive, which presented a deplorable scene. Over half the comb was entirely destroyed, and the bottom of this part of the hive was covered two or three inches with web and worms. On the remaining combs the bees were gathered as if awaiting their impending doom. I immediately removed what comb remained, with the bees, to another hive. The bees commenced work with much vigor, but the season was too far advanced to enable them to gather sufficient food for the winter. On the 6th of this month I examined them, and finding their stores getting low, I gave them a card of honey, containing about nine pounds, which will be sufficient to carry them through the winter. I also examined all my hives, see-

ing every card of honey, and learning the condition of each stock. I found and destroyed about thirty cocoons containing grubs.

With this hive and Langstroth's work on the bee (which by way is the best work ever published) a man would be as culpable for losing a stock of bees, as he would be for losing his sheep or cattle for the want of care.

I would therefore say to the inquiring friend, and all others, if they wish a "perfect safeguard against the ravages of the moth," and a certainty of success in bee culture, they had better procure Langstroth's book and hive.

R.

From the New England Farmer.

Onions.

MR. BROWN:—In your March number of the *Farmer*, I noticed a request of a subscriber for information respecting the culture of onions—and an invitation from yourself to any one who may possess such information to impart it. I perceive, also, in the same number, a communication from Hollis Chaffin, of Providence, R. I., which purports to contain the secret of the whole business, but which, I am sorry to say, I have found to fail in my own case. Having tried almost every experiment in the growing of this vegetable, I feel some confidence in addressing your correspondent on the subject, and assuring him of one successful—though it may not, for large crops, prove a very profitable mode of raising them.

It was in 1848 the maggot first appeared among my onions, almost entirely destroying the crop, which led me the following year to test many of the modes recommended by agricultural journals for protecting the same. All these plans proved abortive. The next year new experiments were tried, among which was freeing the ground of insects by great fermentation, but this also failed of success. A small crop was raised the subsequent year on rock-wood, well decomposed, mixed with soil from an upland pasture. At that time, as none of my neighbors could succeed in the least, I imagined I had discovered the "secret," and presumed that a saline manure was all that was required to prevent injury from maggots, but in this I was mistaken, for the very next season the principal part of the crop was destroyed by this pest.

Speaking one day with a person who had witnessed a mode of raising onions pursued in Nantucket, I was induced to try the following experiment, which I found to succeed: I marked out my bed the size I desired it, and threw out the soil to the depth of eight or ten inches. I then filled in with clam shells, which I then had leveled, and beat into a solid bed with a heavy maul, then slightly covered with rich soil, say less than one inch deep. In this I planted the seed, and ever since have found no difficulty in raising fine onions entirely free from the maggot.

The origin of the maggot I have spoken of before in another journal, but for the benefit of such as are unacquainted therewith, I may repeat the substance of what I then said. Al-

most invariably where a plant droops, it will be found to contain one or more maggots.—Now by carefully removing the earth from around the plant, there will be seen a small insect, which will run from one lump of dirt to another, making great exertions to secrete itself, which if allowed to do, it will work its way deep into the soil, but if not permitted to hide, will fly away. This insect unquestionably deposits its egg in the envelope of the stock, just under the surface of the ground, and next to the bulb, where it soon starts into life, and eating into the interior of the plant, works its destruction. This pest will not assail the plants where the fly cannot penetrate easily into the earth.

OLD ORCHARD.

Maine, April 13th, 1857.

State Agricultural Society:

We are authorized by the Secretary of the State Agricultural Society, to say that the premium list for the third Annual Fair of this State, has been revised and amended, and will in a few days be ready for publication. The only variations in any of the departments necessary to be made known immediately to competitors, are in the fall crops. The corn premiums are so altered as to run thus:

Largest crop corn on 20 acres,.....	\$30
Largest crop corn on 10 acres,.....	20
Largest crop corn on 5 acres,.....	15
Largest crop corn on 1 acre,.....	10

To be grown on resuscitated land—i. e., land which had been exhausted by cropping and restored by good management and manure. A premium for the largest production of cotton on one acre, with mineral or foreign manures, same requisition on domestic manures. Also a premium of \$30, to be awarded to the farmer or planter who produces the largest nett crop per hand, all things considered.

The Executive Committee have endeavored to embrace everything valuable or attractive, and to offer every inducement for our people to give evidence of their skill, taste, industry, energy, as well as the industrial resources of the Palmetto State. We sincerely hope that the next annual festival may eclipse all the rest, and that we may have a general ingathering of the clans from the mountain to the seaboard—combining the charms and amenities of social intercourse with the display of agricultural wealth and mechanical skill.

The late financial pressure, which has shaken the commercial world to its centre and brought wholly down some of the strongest commercial and manufacturing establishments, has swept over the South and left it comparatively unscathed. The agriculturist stands firm and sound amidst the general wreck.—They have plenty to eat and plenty to wear, and a little laid up for a rainy day.—*Carolinian*.

Hen manure reduced to powder, and mixed with ashes and fine dry chip dust from the wood shed, is said to be capital for starting ahead cabbages, onions, &c., and corn and potatoes immediately acknowledge its influence.



The Farmer and Planter.

PENDLETON, S. C.

Vol. IX, No. 4, : : : : April, 1858.

The Law of Newspapers.

We would call the especial attention of subscribers who intend discontinuing their paper without paying up all arrearages, to the following:

1. Subscribers who do not give express notice to the contrary, are considered as wishing to continue their subscriptions.
2. If subscribers order the discontinuance of their papers, the publisher can continue to send them until all arrearages are paid.
3. If subscribers neglect or refuse to take their papers from the office to which they are directed, they are held responsible till they settle their bill, and order the papers discontinued.
4. If any subscriber removes to another place without informing the publisher, and their paper is sent to the former direction, they are held responsible.
5. The court has decided that refusing to take a newspaper from the office, or removing and leaving it uncalled for, is *prima facie* evidence of an intentional fraud.

A Bed Quilt Lost.

At the last Fair at Columbia, a fine Patch-Work Quilt, with the name of Miss RACHEL McFALL, attached, was left, as is supposed, in the Ladies' Hall. Any information respecting it, will be gladly received by the

EDITOR.

Communications.

"*Capillary Attraction and Dew.*"—We trust the length of our leading article on these subjects will not deter our subscribers from a careful and studied reading of it, and if any doubt the theories advanced by "Pendleton," we invite a full and free discussion in our columns, of the matter in dispute. Increasing the area of the land cultivated, by deep plowing, may be a new idea to some, but not to all readers of agricultural papers; of course it would alarm an anti-book farmer; be it new or old, however, there is no doubt of the truth of the position, and that not only the area, but the amount of food to growing plants, is greatly increased even *without* the application of additional manure; or in other words, that in proportion to the depth of plowing (subsoiling) will be the increase of the "amount of pasturage for the roots of plants" and product of the land, to a certain extent, whether manure be applied or not. Of inorganic manures the surface may be and often is almost

entirely exhausted, whilst an abundant supply may be found in the subsoil for all ordinary crops. It is truly a cheering idea and one not altogether chimerical, that in plowing an acre of land 12 inches deep, we make it equal to three acres plowed to the depth of 4 inches only. Think of it, brother farmers and planters, and let us hear to what conclusions you arrive.

"Weeds"—Our friend "Broomsedge" is down on us again like a thousand of brick, in defending his weedy row, and has silenced our "batteries" until we can make some repairs and increase our stock of ammunition, for we have not "run" so far that we shall not again return to the charge. Recollect, friend B., that "He that fights and runs away, may live to fight another day."

"*Improvement of Wornout Soils—A Proposition.*"—Our esteemed correspondent, G. D. HARMON, is again welcome to a "place in the picture." May his views be embraced and advice taken by the farmers and planters of the South; then shall we see the beginning of agricultural improvement in the old cotton growing States, and not whilst so many are abandoning their old homes and seeking new ones in the fertile West.

We should be greatly pleased if the "proposition" of our friend could be embraced by a sufficient number of writers to make up the amount proposed, and for the purpose specified; but we much fear the result, knowing as we do, how few responded to a similar proposition made by Col. DOGAN, in our last volume. The stake is small to each contributor, however, and as much valuable information on a most important subject may be elicited, we would solicit, and most earnestly urge our writing friends to the contest. What say you? Send up your names—the first twenty received to have the field.

Salmagundi. and several other interesting communications will be found in our present number, of which we cannot now separately speak, but only request that they shall have a fair hearing.

The Premium List of our State Agricultural Society, and one superior to any thing we have heretofore had, will be found in its proper place in this number. Look over it carefully, and begin to prepare for such premiums as you *intend* taking.

To Correspondents.

Our friends desiring to know their accounts, or an answer to their enquires, must either enclose a stamp, or wait for an answer through the Farmer and Planter.

T. H. Z., *St. Matthews.*—We find you have no credit for vol 8, to which we apply your dollar, now enclosed.

J. F. R., *Huntington, S. C.*—You say—"We have not received any of the Farmers this year"—for which we cannot account. Both your papers, and W. Y.'s have been regularly mailed for your office with five others. How is this, Mr. Post Master? Has no subscriber received his paper at your office this year? A screw loose somewhere, certain. And this is not the only part of the Post Office machinery that is out of order. We saw a subscriber at Horse Cove, N. C.,

the other day, who does not get half his papers the year round. Wonder who steals it on the way, instead of subscribing and paying for one of his own, like an honest man would do.

D. H. R., *Buckhead, S. C.*—The blank in the recipe for water-proof composition in our November number, 1855, should be filled with the figure 2, we presume. We have referred to other numbers, but find the impression so dim, that we cannot make it out. The following is a similar recipe, which we find in the *Cotton Planter and Soil*, February No.:

Leather of every description made Water-proof, and nearly as good as new.—Boiled oil, 16 parts; spirits of turpentine, 2 parts; beeswax, 1 part; rosin, 1 part; Venice turpentine, 2 parts. Mix and use while hot.

Hog Cholera.

To our friends, especially about Newberry, where, we understand, the hog cholera is prevailing, we refer the able and interesting article from the pen of Dr. Ross. We would further advise those whose hogs are affected, to try a preventive. When we, a few years ago, raised hogs in Cass County, Ga., much more extensively than we now do, we more than once put a stop to a very fatal disease among our hogs, *by dipping ears of corn in thin tar, made thin by warming, and throwing an ear to each, occasionally.*

For the Farmer and Planter.

That Chapter on Fault Finders---The Proper time to Cut Timber.

MR. EDITOR:—That "chapter" more than surprised us. We felt, we suppose like the little boy did, who

"Bent his bow to shoot at the crow;
And killed the cat in the window."

It was the least of our intention to have censured or found fault with the action of the Executive Committee, for they had our warmest sympathy. We regarded them as erring mortals, and knew their position would subject them to much fault-finding, until a system of action was perfected through experience, and this experience strengthened by suggestions coming from the friends and more observant members of our Society. We ventured to make some suggestions, and intended to have made some more, but as those already made, and "being to the point," having so offended the Executive Committee, that we can venture no further in that direction. And if we ever feel the necessity, may ask absolution for what we have said and done.

THE PROPER TIME TO CUT TIMBER.—The old timber cutters selected the full moon in February, as the best season to cut timber for durability; for the reason, as they supposed, that the sap of the wood at that season return-

ed to the ground or roots of the tree. But accident proved that timber cut during the summer months, was more durable than that cut in the winter, and the reason is obvious. In the summer season, or when the tree is growing most vigorously, the sap is thin, and diffused generally through the wood, and if cut at that stage, is dissipated by evaporation—leaving the wood dry and firm. On the contrary, if cut in the winter, the sap not returning to the roots as supposed, but is concentrated in the centre or heart of the wood, and becomes inspissated or thick, forming a gelatinous substance; and if cut at that stage, the sap, instead of being dissipated by evaporation, takes on putrefactive fermentation, which causes the wood to rot.

SPARROWGRASS.

Little Branch, March 15th, 1858.

For the Farmer and Planter.

"The Southern Trout."

(*Gristes Salmoides.*)

MR. EDITOR:—In Mr. Woodward's report on Pisciculture, in your March number, I observe that he styles this noted Southern fresh water fish, "a bass," and gives that world renowned naturalist, the Rev. John Bachman, D. D., as his authority. Now my excellent friend Bachman will be surprised to see this announcement: It is not a "bass" nor yet a trout, but is known to naturalists as *Gristes Salmoides*, (Salmon—like *Gristes*), and has no congener in natural history nearer than the true *Salmo*—hence its appropriate designation. It is in no manner entitled to the name of "Carolina" trout, as it abounds in the waters of the flat lands from Virginia to Florida, and here attains its greatest proportions, frequently weighing 20 pounds. I have seen three hundred pounds of this fish, taken by three sportsmen in an hour, on the Withlacoochee River. It is the only fresh water fish in the regions in which it abounds, that is *true game*, and I would like to see it designated by its proper name. Call it *Gristes*, for short, but do not add "Carolina," as a prefix to a fish first discovered and eaten in Florida, by Ponce de Leon and Hernando de Soto, not half a hundred miles from the place I pen this hasty note. PISCATOR.

Watula, Fla.

FODDER—OATS.—One of the most wasteful practices in regard to fodder, is the present practice of cutting and feeding oats. They are usually allowed to stand till ripe, and the stalk yellow, and then cut, threshed, and the straw, of little value, used for bedding, or litter. If oats are cut when a little green, and then well cured, the straw is the very best of fodder.

Feed oats, thus cut and cured in the sheaf, to horses, and they will eat the straw in preference to hay; and a farmer saves the trouble and expense of threshing, and his oat straw is worth as much as its weight of the best of hay.—*Exchange.*

UN SOUND CORN FOR STOCK—INJURIOUS EFFECTS.—The Louisville Journal says:—

We have been informed that several horses have died in this country, recently, from the effects of eating corn rendered unsound by the early frosts and recent wet weather. There will be but little corn left uninjured this year, and if it effects animals that are fed on it, in the way we have been informed, farmers had better exercise some care on the subject.

The following articles on "Shelter for Stock" and "A Plea for Domestic Animals," we take from the Nov. No. of the "Valley Farmer." Will our readers read and profit by it, or at least such of them as have not already provided such comforts for the dumb brutes dependent on them? The past winter has generally been favorable to exposed stocks; but what man, having any humanity in his composition, could sleep soundly on the memorable nights of the 11th, 12th and 13th of February, knowing that any portion of his stock were exposed in fence corners to the unmerciful "pellings of the pitiless storm?" Some, doubtless, there are, who pretend to believe, and will even argue in justification of their neglect to provide comfortable quarters for their dumb beasts—that there is no real necessity for it—that, as the woman said in skinning the live eels, they are "used to, and therefore do not regard it.—Such, we consider, a poor excuse for the neglect of one's own interest, to say nothing of the inhumanity of such a course. Nothing gives us a more unfavorable opinion of a man's management, than to see his stock exposed to all weather.—Ed. F. & P.

Shelter for Stock.

This is a subject that we have before introduced and have probably said all that should be required to induce every humane man to provide ample protection for all the animals he has on his farm. Circumstances in the settlement of the great west have established some customs that should at once lead to improvement. The most prominent one that presents itself at this time to our mind is the almost universal neglect with which farm stock meets during winter. It would seem that a moment's reflection and comparison of our own persons and the protection we require, with the dumb and shivering brutes that belong to our farms would insure a warm stall or shed for every one of them. But setting humanity aside, interest should immediately lead to a reform in this respect. The learned Liebig asserts that "our clothing is merely an equivalent for certain amount of food." In other words if we keep our bodies warm by proper clothing and shelter we cannot eat so much, because the amount of heat required is in part secured by protection, which otherwise must be maintained by the consumption of an extra quantity of food. It is well known by the breeders of fine

stock that if, by any means a young animal is neglected or exposed to the cold during the first or second winter of its existence it never recovers from it, and fails to reach the same size and point of excellence that it otherwise would. It is too often the case with our western farmers that they turn out their young animals with poorer food and less shelter than older and more hardy ones receive. With this treatment they enter upon the following spring emaciated and frequently diseased, often covered with vermin, which will require several months of warm weather and good pasturage to bring them up in flesh and strength where they would have been had they received proper winter care.

The present has been a most prosperous season with the farmer. No excuse can be made for want of ability for not providing shelter of some kind for every domestic animal in the country. If lumber is not convenient, the immense straw piles we see in every direction, with a few "forks" and poles or old rails may be put into shape and answer every purpose. A few days labor will supply each farm with comfortable shelter for every animal.

Another consideration should not be lost sight of. Making sheds and having them well supplied with litter from these straw piles will not only contribute immensely to the comfort of the animals, but by changing the litter as often as is necessary an immense amount of manure can thus be secured before spring. By adopting this course both the liquid as well as the solid manure is saved. No land is so rich as to bear continual cropping without growing poorer, and a judicious management of the straw piles and manufacture of manure, like proper care for the stock is an investment that adds to the farmer's capital as surely as a crop of wheat of fifty bushels to the acre does.

Now that the crops are chiefly harvested and the winter grain sown no better time can present itself for the performance of this work. A vast change has overtaken the farmers of the west by the introduction of roads and other improvements that is adding millions to the wealth of the country. To avail himself of the full benefit of these let every farmer improve his practice and his farm to the extent of his ability.

A Plea for Domestic Animals.

The whistle of the Autumnal winds reminds us of the howling of the unsheltered herds, and the bleating of the sheep exposed to their blasts. We pity the houseless man, the homeless poor of our own kind, but how often permit our own animals to remain all winter exposed to the wind, rain and cold. If their plaintive complaints could be understood, we should be daily rebuked for our inhumanity. They perform for us their tasks, meekly submit to the yoke or harness, furnish us with the clothing from their back and food from their udders, and give themselves at last for our tables, and yet we do not afford them comfortable lodgings. The damp earth is their bed. The wet atmosphere is their covering. Many of them are but scan-

tily fed. Where is the common tenderness of our hearts? We see our own stock shivering through these cold winters with the thermometer below zero and do not pity them. We have not a soft place in our hearts for them.—If we had we should make sheds, barns, stables, for them. If we sought their comfort we should provide them with comfortable lodgings. We plead for the stock just now on the ground of common compassion. It is ungenerous to give them no shelter. It is ill-treatment to turn them out to companion with the snow and rain and storm. Put up the sheds, Oh, ye kind hearted farmer, and give your stock some comfort in their lives. What loves a good shelter better than the docile cow? How she lows around the barn for hours before the time for her sheltering comes. Tell me not that animals are not grateful for favors done them.

Then it does them good. They grow better; they fatten better, they work better, they produce better, they are healthier, more profitable, handsomer, larger. In every way we get amply paid for the care of our stock, especially for their good shelter. Our good horses, stallions, geldings, trotters and racers; are they reared without shelter, without care, without kindness? Our best bulls, cows, sheep, hogs, such as are exhibited at our fairs, and are found on some farms, are they reared in the open air, through all temperatures, all weathers? Far from it. The farmer's children are scarcely better cared for than such stock. Then we say, shelter for kindness, shelter for growth, shelter for profit, shelter for all the uses of stock.

The "Hungarian Grass" is nothing more or less than the Millet which we have been raising, now two or three years, and of which we have spoken heretofore. We have any quantity of seed to sell at *two dollars* a bushel—just half what we sold at last year.—E. F. & P.

The Hungarian Grass.

There seems to be a general interest felt among farmers to become acquainted with this new grass, (or more properly called Millet) if we may judge from the number of letters constantly pouring in upon us, asking for information about it; in fact, the interest seems second only to that of the Sorghum question. We have never grown it, nor even seen it growing, but are in possession of parcels of the dried grass and seed from those who have grown it. From its appearance, we are inclined to think its cultivation deserving the attention of every farmer—especially such as have not manure, with which to put their ground in proper condition to ensure good crop, of timothy and clover. Its stalks are long and fine, and well supplied with long, slender leaves. Mr. W. Hall, of Monroe County, Iowa, sends us a letter from which we gather some information, that we think reliable.

Mr. Hall says he has been raising the Hungarian grass four years, and thinks it makes the best hay that he has ever fed to stock—that one ton of it is equal in nutriment to one and a

half tons of timothy. He reckons it better than clover for pasturing hogs. He sows one peck of seed to the acre, which produces a crop as thick as it should stand. It stools out like wheat, but sends up more shoots. He has counted forty stalks from one seed. He made from one acre, 6 tons 803 lbs. of hay, but thinks four tons about an average crop; had twenty-five acres last season that produced not less than one hundred tons of hay. Three years ago he had thirty acres of timothy, from which was obtained only about fifteen tons of hay.—The farmers in this neighborhood have all plowed up their timothy fields, and gone in to raising the Hungarian grass.

The seed should be sown from the 15th May to the 10th of June—one peck to the acre, and cultivated in the same manner as oats. The yield of seed is from twenty to twenty-five bushels to the acre.

We think the foregoing statements, though brief, will cover all the inquiries made and afford all the necessary information to those who wish to try it.—*Northwestern Farmer.*

From the Louisville Journal.

Hog Cholera.

(*Pestis Bovina.*)

The immense amount of pork, bacon, and lard that constitutes so large a portion of human food and amounts to so large an item in the commerce of our country renders the successful rearing and preservation of the pig a matter of paramount importance, not only to the farmers and producers of the article, but to the packers, shippers or dealers; and consumers of all classes. It becomes therefore a matter of concern that the swine should be carefully looked after, and, if possible, protected and disinfected from that loathsome and fatal malady which has spread such havoc and devastation among them in the last twelve months in various parts of the United States.

The disease which has proved so fatal to stock recently in various localities, and particularly hogs, has been denominated hog cholera.

Its first development among hogs was in the vicinity of large distilleries, and its cause has been attributed to the influence of strychnine said to have been used in the manufacture of liquors. The subsequent development of the disease, however, in regions remote from such influences and where, by the very nature of circumstances, no such cause could have operated, has pretty effectually dispelled a delusion that the well known therapeutic and toxicological effects of strychnine might never have been able to have done, and we are again left upon the broad sea of conjecture to guess at random at the cause of this fatal malady.

As much of the prophylactic treatment of all diseases, whether in man or in the inferior animals, must depend upon a knowledge of their cause, it is obvious that any deficiency in this department of knowledge must forever be fatal to success. It is unnecessary that I should encumber this article with the many vague theories and speculations that have from time to time been advanced in relation to

the cause of this disease, many or all of which are perhaps as groundless as the one already referred to.

But I will briefly allude to one cause to which the disease has been ascribed, which seems to me to be more plausible than any theory I have heard advanced, and should it, upon further investigation, turn out to be well founded, it will afford at least a certain prophylactic remedy.

I allude to the ingesta of unsound grain upon which the stock may have been fed, and this cause, if it exists, is abundantly sufficient to produce all the disastrous results which we have witnessed, as is well known to toxicologists.

Speaking of the effects of the secale cornutum, Mr. Taylor, on poisons, on page 433, says: "The chronic effects of this poison have been witnessed occasionally on the continent in an epidemic form. In one set of cases the nervous system appears to be especially affected, indicated by vertigo, loss of sensation, tendency to sleep, rigidity of the muscular system, tremulous gait and convulsions. After death the chief appearance consists of congestion in the brain, liver and heart."

In another set of cases the blood appears to undergo some change, hemorrhages ensue, black spots and boils appear in various parts of the body, and there is mortification of the extremities. After death the blood is found black and very fluid throughout the body. Mr. Taylor says "that ergot is a disease that is not confined to rye but effects many kinds of grasses." And may not unlikely effect other kinds of grain.

It may not be improper to revert to the fact that a great deal of the last corn of the last year's crop was materially injured by the early frost, which destroyed vegetation several weeks earlier than usual and impaired the late crops of corn, and, without presuming to attribute the disease to the above cause, I would remark that I have witnessed the violence of the epidemic among hogs that were fed on grain that was injured by frost, while others in the same locality which were fed on well matured grain were comparatively exempt from the disease; while it is equally true that many droves of hogs that were fed entirely on mature grain were almost annihilated; but it is believed by many, and scarcely admits of a doubt that the disease is contagious, and this fact may account for its development in hogs that were fed on mature grain. Without intending to be tedious upon this subject, it is proper to remark that epizootic diseases among stock, beasts and birds of various kinds have not unfrequently prevailed in an epidemic form during, shortly after, or just before an epidemic of influenza and other epidemics in the human species, supposed to be produced by some peculiar electrical condition of the atmosphere.

Mr. Watson, in treating on the epidemic of influenza, says: "It has been observed also that, shortly before, or during, or soon after prevalence of these epidemic catarrhs, epizootic diseases have raged; various species of brutes and of birds have been extensively affected with sickness, while on some occasions prodigious

swarms of insects have made their appearance. In fact, a great variety of facts concur to render it probable that some peculiar condition of the air existed which, though it might be favorable to the multiplication of some species of living creatures, such as the insects just referred to, operated as a poison upon the human body and upon the bodies of many of the brute creation." After alluding to the reasoning in reference to the cause alluded to, he says:

"The facts in support of these views are of this kind: Meat sent up by means of a kite high into the atmosphere, during the prevalence of the diseases, has returned putrid."

Watson's Practice, page 542.

It is scarcely necessary to mention the fact that a similar epidemic of catarrhal disease and ulcerations of the throat to the one referred to by Mr. Watson is now prevalent here and has for some time been in various parts of the United States.

I will just remark that accounts are current of the prevalence of epizootic diseases among cattle at this time in Indiana and some parts of Tennessee. With regard to the symptoms which mark the disease called hog cholera, they are too well known to require minute description; all are not however affected alike, and may die without any manifestation of disease at all. Vomiting and purging, although frequently accompanying symptoms, are by no means universal. Indeed, I can refer to no one or symptom that is. But the most remarkable feature of the external phenomena which has attracted my attention is the fetid odor emanating from the hog while he yet seems vigorous in many instances the smell is so offensive to attract the attention of buzzards, while the animal is still able to run about. In such cases I have observed a black sordes upon the tee, and the breath seemed as a warm vapor from putrid mass of carrion. It is not unfrequently that blood is mixed with the urine and feces and lumps of coagulum thrown from the nose in the respiratory process, toward the termination of the disease.

There is a remarkable tendency to bleed from the slightest injuries about the mouth or tender parts, and the blood seems to gravitate and settle to the most dependant parts of the animal in patches of petechiae or minute extravasation of blood beneath the cuticle, and in some instances one or more of the legs are in a state of gangrene. There are other symptoms, such as stiffness and seeming rigidity of the muscles and a disposition to walk one-sided, as the spine or kidneys were affected, but these like all the rest of the symptoms, are by no means universal.

The writer here goes on to give the post mortem appearances after death, and concludes:

"So far as my experience of the use of remedies has extended in the treatment of hog cholera, I believe I have seen the most satisfactory results from the following prescription: Oil drachm pulv. chlorate of potash, 1 ounce of muriatic acid and one ounce water, to be put into tight corked bottles and kept in a dark place. Two drachms or teaspoonfulls of this mixture

added to a pint of water constitutes the famous chlorine mixture which has been so highly extolled in the treatment of putrid diseases in Europe and in America, and may be administered at frequent intervals, in two or three ounce doses without danger. The only danger in giving it to the hog, is that of failing to give enough and sufficiently frequent.

It is believed that this medicine will succeed better than any that has been tried in curable cases; but in such violent cases of inflammation (as has been described) of vital organs, it is absolutely certain that nothing would succeed. I think, however, I have seen this medicine successfully employed in prostrated cases. It may be administered in slops or milk, and a hog will not refuse to take it that way, when he will eat it all. But about a disease so difficult to cure and affecting an animal so difficult to treat I have perhaps said enough without discussing the properties of the medicine or the *modus operandi* of its cure.

There is one subject, however, to which I will refer at the risk of being tedious. I mean the danger to be apprehended from eating the flesh of animals that have been afflicted with epizootic diseases.

I give a reported case of an eminent English toxicologist upon this subject. The author goes on to say: "In some instances the poisonous quality of the food is clearly referable to the disease with which the animal was affected when killed. This is especially the case in the epizootic disease called carbuncle, frequently prevailing to a great extent among cattle on the continent.

"The following case appeared about a year since in the *Annali Universali di Medicina*, and has since been published in the *Edinburgh Medical and Surgical Journal*. A heifer which had two carbuncles on the buttock was killed and its flesh sold. It appears that about sixty persons partook of this food, and all were seized with the following symptoms: giddiness, trembling, shivering, violent cramps in the abdomen and limbs, vomiting and purging of a green, bitter matter, intense thirst, sinking of the countenance and delirium. The tongue was observed to be red at the tip and furred at the base.

"These symptoms were severe in proportion to the quantity of flesh of which each person had partaken. With one exception, all the patients recovered under the use of very simple remedies. In the solitary case that proved fatal, the symptoms were not different in character from those above described, but were much more severe. The prostration of strength increased rapidly; there was loss of voice, and a soporific state ensued. This patient died on the second day after admission into the hospital. On a post-mortem examination the body was found to be much emaciated, and there were livid spots scattered over the skin, especially over the lower extremities. The veins of the dura mater were filled with blood, and the spinal marrow was somewhat softened.—In the abdomen, the liver had a tendency to softening and the spleen was diminished in

size.* There was submucous ecchymosis occupying about two thirds of the greater curvature of the stomach, a similar ecchymosis, near the cardiac orifice, and spots of the same character were found at intervals over the whole surface of the intestines.

"In this disease it is said the flesh of the animal is rendered so poisonous that the mere handling is liable to occasion formidable symptoms. Both the solids and the liquids, of the animal appear to become poisoned under its influence."—[Taylor on Poisons, pages 451 and 452.]

There are many more cases on record of the poisonous effects of flesh of animals which had been diseased previous to their having been killed, but I do not desire to encumber these remarks with the repetition of cases more or less similar in their results. I have selected this case because it contained the most overwhelming evidence that the sickness of so large a number, all of whom had partaken of the same meat at the same time, could have originated from no other cause. I close the remarks which I designed to make upon the *Pestis Bovina*. I am aware that I have omitted many things which might have been of interest to the professional man, but it is hoped that the discussion is sufficiently elaborate for the general reader and stock-raiser.

W. W. ROSS, M. D.

Telegraph Springs, Ky., Dec., 1877.

*Uniformly the case 7 hours after eating.—[Ross.]

From the Northern Farmer.

Horn Distemper.

I saw in the June No. of the Farmer, an enquiry over the signature of D. G., concerning the cause and cure of the Horn Distemper. As I have had some experience in doctoring cattle, I will give some information, and if you think it worthy of publication you may use it, if not cast it under the table; it will cost you nothing, as I will pay the postage.

Horn Distemper proceeds from several causes. The most common one is poverty. Another cause is the inflammation of the lining membrane of the nostrils, and cavities of head and horns; another, the overflowing of the gall; a fourth, exposure to the cold, and storms for want of a suitable shed or stable; a fifth, what we call tail sickness.

Cure: if poverty is the cause, give one pint of soft soap, mixed with the same quantity of new milk, once in twenty-four hours for a week, or until the animal regains its appetite. In every case put upon the head between the horns a tablespoonful of spirits of turpentine. I take a pint of soft soap mixed with salt sufficient to make a salve; then spread it on two or three thicknesses of woolen cloth, and bind it on the horn, about four inches in width; tie it on with strong twine, and let it be worn a fortnight. If inflammation of the nostrils is the cause of the disease, in addition to the above, give gentle physic, and if the animal suffers much pain for want of a sufficient discharge of the matter in the head, which is sometimes the

case, bore the horns, put in some saltpetre, and close the hole again to keep out the cold. If the cause is overflowing of the gall, in addition to the first direction, give some beef-gall until the physic acts thoroughly, then take a hen egg, turn out the white, and mix in the shell with the yolk, some soot and salt, and give one a day, for two days. If the distemper is caused by exposure to the cold, put the animal under a warm shelter, and follow the first direction; if by tail sickness, amputate the tail. If the animal is in good order or high flesh, bleed, but not too freely. In every case care should be taken not to raise the feed too fast.

But "an ounce of preventive is worth a pound of cure." Keep your cattle well sheltered, not exposed to the cold and storms; feed them once a week, with wood ashes and some soot and salt, and you will not be troubled much with hollow horn. S. M. F.

Canoga Lake, June 2nd, 1854.

Don't Sell the Best Stock.

We are satisfied that good stock is of the first importance to farmers. Stock may well be regarded as the standard of agriculture. Where stock is scrawny and poor, agriculture is correspondingly low and unprofitable; where it is fine and fair, agriculture is improved and lucrative. The stock of a country determines the condition of its agriculture. Hence, we say to farmers, don't sell your best stock.—Keep that to breed from, to use and perpetuate in their progeny. Your best sheep, cows and hogs are the very ones you want most. They grow best on the same food. They yield you the best profits. If you keep a breeding mare, you want a good one; the better she is, the more saleable will be her colts.

It is the same plan of some farmers to sell their best stock because it will bring the best price. It is a suicidal course. Do not fatten the best young stock for the shambles. If you have a scrawny creature, get that off as soon as convenient; if you have a good one, keep that. Bring your best stock to maturity before you part with even that which is designed for beef. It is bad policy to slaughter young stock. When it is growing fastest it is most profitable. The quality of the stock kept on the farm is a very important matter. *

[Valley Farmer.]

THE FARMER AND PLANTER.—The March number of this useful journal is on our table, full as an egg of good things. We have called the attention of our readers so often to this journal, that we are at a loss what to say.

Alabama supports an agricultural journal, got up in beautiful style, handsomely, giving some 10,000 subscribers—Georgia has nobly sustained a capital paper for a great many years—so does North Carolina, Tennessee, Virginia and Maryland—we will say nothing of the numbers published at the North. South Carolina has suffered five agricultural journals to die for want of patronage, after a short struggle. One

only has survived the common fate, (the Farmer and Planter), which would have died long ago, if the hard-headed old fellow at the helm had not resolved to starve before he would give up the ship. The present number is worth the subscription, \$1. The loss of wealth and population this District has experienced during the last six months, admonishes us that some effort is necessary to bring about reform in agriculture. Improvement has been effected in the older States by the diffusion of agricultural knowledge. Is there any reason why it cannot be done here? At all events, is not the reason why South Carolina has lost wealth and population, more rapidly than any Southern State, during the last 20 years, worth inquiring into? [Unionville Journal.]

The following was sent to us by a subscriber. We receive a great many recipes from our subscribers, which we give as we receive, not vouching for their efficacy.—ED. N. F.

RECIPE FOR BONE SPAVIN.—One ounce of the oil of vitriol, do. of organum, do. of cedar oil, do. of olive oil, do. Spanish fly, three ounces spirits of turpentine.—Northern Farmer.



Ladies' Department.

"Josie Jonquil."

We "don" our "editorial spectacles," and make our most polite bow to Josie, for the honor of that "little chat this fine morning, about a *certain event*," &c. Is it really so, Josie, that you were there "in a corner taking notes," and *we* did not see you? "Strange, if it be true," as the old woman said when she was told there was such a thing as a *flying fish*. Well, if you were there, we shall find you out yet.

After your interesting description of the party, and of the belles and beaux that composed it, which we must beg to be permitted to pass over, you say "it is almost time for the sweet spring flowers—the violet, and the *yellow jonquil*—my namesake, class, *hexandria*; order, *monogynia*; and I believe the first. Do you love flowers, Mr. Editor? What are your favorites? Living in a *land of flowers*, as we do, and where their cultivation is rendered so easy, I think *every lady* should have a flower garden and herbarium to employ her leisure hours." * * *

To your enquiry, "do you love flowers," &c., we answer we do, but can't say we have any favorites.—We are fond of viewing all beautiful flowers (don't let our better half hear this), but being rather utilitarian, we delight less in seeing flowers than in the pos-

session of their products. The culture of flowers is a pleasant and healthful enjoyment with many ladies. And to *all* and every one, we would advise a visit now and then to the Kitchen Garden, which would contribute as *much* to the pleasure and health of her family.

The faded and withered jonquil enclosed, was received with the sincere hope that "Josie" may live long before she fades or withers so much.

A Word to Mothers.

There is a mother just across the river—a good hearted mother we presume—who has a boy, ten or a dozen years old, a rollicking, jolly little fellow. She loves her boy, no doubt; all mothers do. She would not have a hair of his head harmed for half the world. And yet she gives her boy no peace. She scolds every time she speaks to him. She threatens him with everything within an inch of his life. She harrasses, torments, vexes him in every possible way, and all to make him a good boy, to keep him out of mischief. Now she is going to box him, now thresh him, now take his head off. Then again she is on the point of cow-hiding him, then of beating him, then of skinning him alive. All her tones are sharp, crabbed, snarling, harsh. What pleasant memories her boy can have of maternal love we see not. He is no worse than other boys, yet she tells him there never was such a bad boy, such an unruly brat, such a rascally scape-grace, such a disobedient, good-for-nothing son of a mother. And so it goes from one year's end to another. If the boy reads in the bible, "Honor thy father and mother," he turns to his heart and asks, "for what?" If he reads "can a woman forget her sucking child," designed to enforce the lesson of a mother's love, he answers "yes." He does not believe any of the stories about a mother's love. He believes that mothers are the boys' chief torments. Poor fellow! We pity him. But many more are in a similar situation. Some not so bad, some worse, for they catch all that is threatened.

The habit of scolding grows very naturally out of the mother's anxiety and care-worn condition of body and mind. Our compassion is with mothers, heartily and thoroughly. We know their trials, their vigils, their cares, their love. We know how, worn and weary, they must answer every call, have an eye to every danger, a hand to ever want, an ear to every complaint, how, sick or well, they must bear all and be all things to all the household; yet we would ask for the children's sake, for the mother's own sake, that they refrain from scolding and try the magic of a pleasant word, a smile, a love-pat, a kiss. These things in the end are infinitely more effectual and their influence more salutary. Try it, mothers. *

[Valley Farmer.]

HOW TO MAKE CARROT COFFEE.—*Messrs. Editors*—I have never seen anything in the Country Gentleman respecting Carrot Coffee, and will therefore give you the mode in which it is prepared in my family.

We clean the carrots and cut them into pie-

ces about half an inch square; then put them into a tin under the stove or in the oven, where they will brown and dry hard enough for grinding.

Then grind and use about one part carrots to two parts coffee. It makes both a wholesome and agreeable beverage. Care should be taken not to let the carrots burn while drying. We dry them hard enough to grind easily. If the carrots are good, we think the proportions of carrots and coffee mentioned above are quite as palatable as coffee. Some use a larger proportion of carrots, and some make their coffee entirely of carrots.

C. J. C.
Michigan.

[Country Gentleman.]

TO MAKE WASHING FLUID.—To one gallon of common soft soap, (such as is made by the usual method of boiling the ley of wood ashes and fat), take four ounces of sal soda, one-half gallon of rain or soft water, and a half a gill of spirits turpentine. Place them all in a pot over the fire, and allow the mixture to boil a few minutes. It is then ready for use and can be kept in any earthen or stone ware vessel.—In using this fluid, the clothes intended to be washed should be soaked in water 10 or 12 hours, say over night, and then to a 10 or 12 gallon boiler, or kettle full of clothes, covered with water, add one pint of fluid, boil briskly 15 minutes, and then rinse them out in fresh water. It will be found that little or no rubbing of account will be necessary. Lady readers, try it.

J. J. E.

A NEW METHOD OF PREPARING MUSTARD.—*Eds. Co. Gent.*—I send you a very good receipt, to prepare mustard, far superior to the common way. When prepared in this manner, it has a very pleasant and agreeable taste.

RECIPE.—Powdered astragon, $\frac{1}{2}$ ounce.

Mustard,	1 lb.
Sugar,	1 ounce.
Salt,	1 "
Black pepper,	$\frac{1}{4}$ "
Cayenne pepper,	$\frac{1}{4}$ "
Olive oil,	4 "
Tincture of allspice,	$\frac{1}{2}$ "
" " " " " " " "	$\frac{1}{4}$ "

Vinegar, a sufficient quantity to make it of a proper consistence. Then bottle, and let it stand for a few days before using.

Greensborough, Maryland. J. F. D. L.

[Country Gentleman.]

TO BLEACH MUSLINS AND WHITE CLOTHES BEAUTIFULLY.—Take one pound of Chloride of Lime, and pour on to it in a jar one gallon of water; stir it well with a stick for fifteen minutes; then let it settle and pour off the clear liquor into clean bottles, and cork up for use.—A tumblerful added to a tubful of water, in which the clothes are rinsed, will add very much to their whiteness. This must be made in a stone vessel.

TO CLARIFY CIDER.—Mix together one quart each of lime and clean dry ashes, and two quarts of new milk. Pour these into a hogshead of cider just from the press. In ten hours it will be fit to rack.